ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING MALARIA PREVENTION TOWARDS POPULATION IN PAKSONG DISTRICT, CHAMPASACK PROVINCE, LAO PDR

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ABSTRACT: A cross-sectional study was conducted on 1 - 30 January 2009 to assess the current state of knowledge, attitude, and practice (KAP) regarding malaria prevention in the population in Paksong district, Champasack Province, Lao People's Democratic Republic (Lao PDR). Four hundred and one subjects age 16 - 60 were recruited in this study and a structure questionnaire was used to gather the data. Chi-square was used for analyze an association between independent and dependent variables. The results showed that 59.1% of respondents had good knowledge, 33.2% had good attitude while only 5.7% had good practice regarding malaria prevention. The study found that education, occupation, monthly family income, length of stay, marital status and ever hearing of malaria were significantly associated with knowledge on malaria prevention ($p<0.001$, $p<0.001$, $p<0.001$, $p<0.001$, $p=0.007$ and $p<0.001$, respectively), highly significant association were also found between attitude and occupation, monthly family income, length of stay and education ($p<0.001$, $p<0.001$, $p=0.002$, $p=0.020$, respectively). Moreover, there were strong association between occupation, monthly family income and gender with practice on malaria prevention ($p<0.001$, $p<0.001$, $p=0.017$, respectively). In conclusion health education program with direct interaction to community should be emphasized in order to improve the knowledge, attitude, and practice regarding malaria prevention.

Keywords: knowledge, attitude, practice, malaria, prevention

INTRODUCTION: Malaria is still one of the most widely spread human diseases today and constitutes a major public health problem for a large part of the world's population[1)]. In Lao PDR malaria is a serious health problem today and it is one of the leading causes of morbidity in this country. It is estimated that nearly 80% of the population (4.1 million) is at risk. Most of those affected people live in hard-to-reach locations and health facilities are poor or non-existent. The actual mortality of malaria remains elusive because most patients die at home, resulting from the low level of health services. This disease is a common cause of death in most Lao PDR hospitals. Lao PDR has a malaria burden more severe than in any other Asian country[2)]. The malaria vector control with the use of insecticide treated bed nets[2)]. In order to achieve effective prevention and control, community cooperation and participation are essential. Regarding this, knowledge, attitude and practices of the population in the community play a key role in malaria prevention and transmission control. Therefore, the present study was undertaken to assess the knowledge, attitude and practice of the population in Paksong district, Champasack Province, Lao PDR on malaria and the information from this study would help in planning the policies for malaria control.

MATERIALS AND METHODS: A cross-sectional, descriptive study was conducted from 1–30 January 2009 in Paksong district, Champasack province, Lao PDR. There were 109 villages, 31,919 household and 60,408 people. Ten villages were selected by random sampling. Then the household in each village were selected by systematic random sampling method following the list of total household. The numbers of selected household from each village was a proportional number calculated from sample size (420 household). We did random sampling to select one subject from one household. Of 420, 401 questionnaires

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were completed. Structures questionnaire in the Lao language was used to collect the data. The questionnaire was reviewed and amended by three experts for the content validity. Ten research assistants were selected and trained about the purpose and objective of this study, content of questionnaire and data collection process. Knowledge, attitude and practice regarding malaria prevention were determined. Chi-square test with the P-value of < 0.05 was used to indicate statistical significance.

RESULTS: The study population included 401 respondents whose characteristics were summarized in Table 1. The level of respondents' knowledge, attitude and practice regarding malaria prevention were shown in Table 2. Respondents' knowledge, attitude and practice were classified as in Table 3, "good, moderate and poor". The cut point for "Good" greater than 80% of total scores, "Moderate" is between 60% to 80% of total scores, and "Poor" is less than 60% of total scores. Although 59.1% of respondents had good knowledge, 33.2% had good attitude and only 5.7% had good practice towards malaria. When look in detail on malaria knowledge, more than one-third of them had poor knowledge on malaria transmission and malaria symptom (44.4% and 38.7%, respectively), one-fourth of them had poor knowledge on malaria vector (23.2%). Regarding to practice, most of respondents had good practice related to mosquito net (90.8%), all family members always sleep under mosquito net (80.3%), and more than half of respondents (62.3%) always sleep under Insecticide Treated bed Nets (ITNs). Concerning practice on mosquito repellent, 35.1% of respondents practice net use and only 8% of them used indoor or outdoor spraying. One-fourth of them (25.2%) always wearing long sleeves cloth when stay and working outside at night time, about 32.9% of them always sleep under mosquito net when they stay in the coffee field and forest (table 3).

Surprisingly, the proportion of good knowledge was higher in the group with lower education level (primary and secondary school) than those high education level (high school, college or university) ($p<0.001$). Among the respondents with occupation group, the officer group had better knowledge than working group ($p<0.001$), the respondents with the total monthly family income between 1,000,000 Kip (3,770 Baht) to 2,000,000 (7,540 Baht) Kip per month, had better knowledge than those family earn less than 1,000,000 Kip per month ($p<0.001$), and stayed in Paksong more than 5 years had better knowledge than those who had stayed less than 5 years ($p<0.001$). Concerning the marital status, those who were married had lower knowledge than single, divorced, widowed and separated group (p-value = 0.007). Moreover, we found that those who were heard of malaria had better knowledge than those who never heard of malaria ($p < 0.001$).

Regarding to the attitude, the proportion of good attitude was higher in the group of lower education level than those who had high education level ($P<0.020$). About the occupation, good attitude was higher in officer group than working group ($p<0.001$), the total monthly family income between 1,000,000 Kip to 2,000,000 Kip per month, had better attitude than those who family earn less than 1,000,000 Kip per month ($p<0.001$), and the respondents with length of time stay who stayed in Paksong more than 5 years had better attitude than those who had stayed less than 5 years ($p<0.002$), and respondents who ever heard of malaria tend to had better attitude than those who never heard of malaria ($p < 0.001$).

Regarding practice, the proportion of good practice was greater in officer group than housewife group ($p<0.001$), the respondents with total monthly family income between 1,000,000 Kip to 2,000,000 Kip and more than 2,000,000 Kip had better practice than the group with total family income less than 1,000,000 Kip ($p<0.001$). Finally, more percentage of good practice had been found in female group than in the male group ($p=0.017$) (table 4).

Table 1: Characteristics of the respondents (n=401)

	Number	(%)
Age		
17-20	4	1.0
21-30	80	20.0
31-40	112	27.9
41-50	112	27.9
51-60	93	23.2
Mean = 41.29, SD =10.946		
Range = 17 - 60		
Gender		
Male	266	66.3
Female	135	33.7
Marital status		
Married	350	87.3
Widowed	23	5.7
Divorced	14	3.5
Single	13	3.2
Separated	1	0.2
Education		
Primary school	225	56.1
Secondary school	68	17.0
High school/College/University	65	16.2
Never attend school	43	10.7
Occupation		
Agriculturist	344	85.8
Civil officer	22	5.5
Teacher	13	3.2
Health personnel	7	1.7
Salesman	7	1.7
Housewife	6	1.5
Daily wage	2	0.5
Monthly family income (Kip)		
<1,000,000	348	93.8
1,000,000-2,000,000	45	11.2
>2,000,001	8	1.9
Mean = 619361 SD = 520357		
Rang = 100,000-3,000,000		

Table 1: Characteristics of the respondents (cont.)

	Number	(%)
Duration stay in Paksong district		
More than 5 years	23	5.7
Less than 5 years	378	94.3
Total family member (person)		
1 - 2	16	4.0
3 – 5	184	45.8
6 – 8	157	39.2
9 – 11	40	10.0
12 – 14	4	1.0
Mean = 2.93 SD = 0.31		
Received or heard any informationabout malaria		
Yes	397	99.0
No	4	1.0
Source of information		
Hospital	264	65.8
Health center	223	55.6
Home (family member)	101	25.2
Community head leader	282	70.3
Neighbor	192	47.9
Drug hawker	123	30.7
Tradition health	63	15.7
Village health worker	286	71.3
Family member ever suffer from malaria		
Yes	147	36.7
No	254	63.3
Source of healthcare first seeking for treatment		
Hospital and health center	108	73.5
Village health worker	21	14.3
Other	18	12.2

Table 2: Level of knowledge, attitude and practice on malaria prevention (n=401)

Item	Good	Moderate	Poor
Overall knowledge of malaria	237 (59.1)	82 (20.4)	82 (20.4)
Level of attitude	133 (33.2)	233 (58.1)	35 (8.7)
Level of practice	23 (5.7)	78 (19.5)	300 (74.8)

Table 3: Practice towards malaria prevention (N=401)

Practice towards malaria prevention	Always N(%)	Sometime N(%)	Never N(%)
Sleep under mosquito net	364 (90.8)	33 (8.2)	4 (1.0)
Check the hole on mosquito net	114 (28.4)	250 (62.3)	37 (9.2)
Use impregnated bed net	250 (62.3)	53 (13.2)	98 (24.4)
All family member sleep under mosquito net	322 (80.3)	61 (15.2)	18 (4.5)
Use mosquito repellent coil at night time	37 (9.2)	63 (15.7)	30 1(75.1)
Use repellent prevent yourself from mosquito bite	141 (35.2)	145 (36.2)	115 (28.7)
Use indoor anti-mosquito spray in the house	27 (6.7)	29 (7.2)	345 (86.0)
Use outdoor anti-mosquito spray in the house	31 (7.7)	79 (19.7)	291 (72.6)
Wear long sleeve cloth when stay outside at night time	101 (25.2)	273 (68.1)	27 (6.7)
Clean the bushes around the house	92 (22.9)	287 (71.6)	22 (5.5)
Clean the stagnant water near the house	86 (21.4)	262 (65.3)	53 (13.2)
Clear the dark corner in the house	96 (23.9)	298 (74.3)	7 (1.7)
Sleep under mosquito net when stay in forest	132 (32.9)	204 (50.9)	65 (16.2)
Go to health service when you think you have malaria	233 (58.1)	166 (41.4)	2 (0.5)

Table 4: Association between characteristics and knowledge, attitude and practice (n=401)

Characteristics	N	Knowledge	
		Good	Moderate & poor
Education[a]			
Never attend school	43	11 (25.6)	32 (74.4)
Primary school + Secondary school	284	106 (37.3)	178 (62.7)
High school + College/University	74	16 (21.6)	58 (78.4)
Marital status[c]			
Married	350	198 (56.9)	152 (43.1)
Single+Divorced+Widowed+separated	51	39 (76.5)	12 (23.5)
Occupation[a]			
Working group	353	96 (27.2)	257 (72.8)
Officer group	42	35 (83.3)	7 (16.7)
Housewife	6	2 (33.3)	4 (66.7)
Monthly family income (Kip)[a]			
< 1000000	348	96 (27.6)	252 (72.4)
1000000-2000000	45	33 (73.3)	12 (26.7)
>2000001	8	4 (50.0)	4 (50.0)
Length of stay (years)[a]			
1 - 5	23	1 (4.3)	22 (95.7)
> 5	378	132 (34.9)	246 (65.1)
Education[e]			
Never attend school	43	11 (25.6)	32 (74.4)
Primary school + Secondary school	284	106 (37.3)	178 (62.7)
High school + College/University	74	16 (21.6)	58 (78.4)
Occupation[a]			
Working group	353	96 (27.2)	257 (72.8)
Officer group	42	35 (83.3)	7 (16.7)
Housewife	6	2 (33.3)	4 (66.7)
Monthly family income (Kip)[a]			
< 1000000	348	96 (27.6)	252 (72.4)
1000000-2000000	45	33 (73.3)	12 (26.7)
>2000001	8	4 (50.0)	4 (50.0)
Length of stay (years)[b]			
1 - 5	23	1 (4.3)	22 (95.7)
> 5	378	132 (34.9)	246 (65.1)
Gender[d]			
Male	266	10 (3.8)	256 (96.2)
Female	135	13 (9.6)	122 (90.4)
Occupation[a]			
Working group	353	5 (1.4)	348 (98.6)
Officer group	42	16 (38.1)	26 (61.9)
Housewife	6	2 (33.3)	4 (66.7)
Monthly family income (Kip)[a]			
< 1000000	348	10 (2.9)	338 (97.1)
1000000-2000000	45	11 (24.4)	34 (75.6)
>2000001	8	2 (25.0)	6 (75.0)

[a]p<0.001, [b]p=0.002, [c]p=0.007, [d]p=0.017, [e]p=0.020

DISCUSSION: Concerning to overall knowledge on malaria prevention, 59.1% of 401 subjects had good knowledge and is quite lower than the finding in Umpiem Mai Refugee camp, Phobphra district, Tak Province Thailand (62%)[3]. Regarding to respondents' attitude towards malaria prevention, 33.2% of respondents had positive attitude level and this was lower than the study in Surin province, Thailand (61.3%)[4]. In relation to level of practice of respondents, only

5.7% of them had good practice, 19.5% had moderate practice and most of respondents had poor practice (74.8%) on malaria prevention. The finding from this study shows the consistency with a study in Thailand[3] and Vietnam[5]. We also found that lower education level had better knowledge than higher education level, it may due to higher education level moved from low risk areas where the people in this area don't have experiences about malaria, they never attend health education programme and did not have health education at school, This study reveals the information that (i) only half of the respondents had good knowledge while one third had good attitude and only few of them had good practice regarding malaria prevention, (ii) to encourage practice we must overcome economic condition, (iii) improving malaria vectors control by mosquito net, especially insecticide treated bed net, encouraging agriculturist to use mosquito net regularly in the coffee field or forest, raise of elimination malaria vectors by spraying indoor/outdoor anti-mosquito, and clear the dark corners in the house (iv) promote practice and contributed to the challenges of malaria prevention and control.

REFFERENCES:

1. World Health Organization (WHO). 2007. Global Malaria programme. Vector control, [cited 13 November 2008]; Available from: http://www.who.int/malaria/vectorcontrol.htm

2. Roll Back Malaria. 2005. Monitoring and Evaluation: Lao Public Democratic Republic (Lao PDR). Generated: 4/27/2005. Available from: http://www.rbm.who.int/wmr2005/profiles/laos.pdf.

3. Phensaengngam W. 2008. Assessment of knowledge, attitude and practice regarding malaria prevention towards Karen ethnic group in Umpiem Mai Refugee Camp, Phobphra district, Tak province, Thailand. Master's thesis, College of Public Health Science, Chulalongkorn University.

4. Daud IM. 2001. Malaria prevention behaviour of people in Dan Village of Karcheang district, Surin province. Master's thesis, Faculty of Public Health, Mahidol University.

5. Tien TV. 2005, Knowledge perception and malaria preventive behaviors among Raglay ethnic group in Khanh Thanh Commune, Vietnam. Master's thesis, Faculty of Public health, Mahidol University.